

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P219498

Luminaire Tested: **LDSQ4B15D010 EU4B10209035 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219498
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35471)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B15D010 EU4B10209035 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1010.8 lumens
Efficiency: N/A
Efficacy: 70.2 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

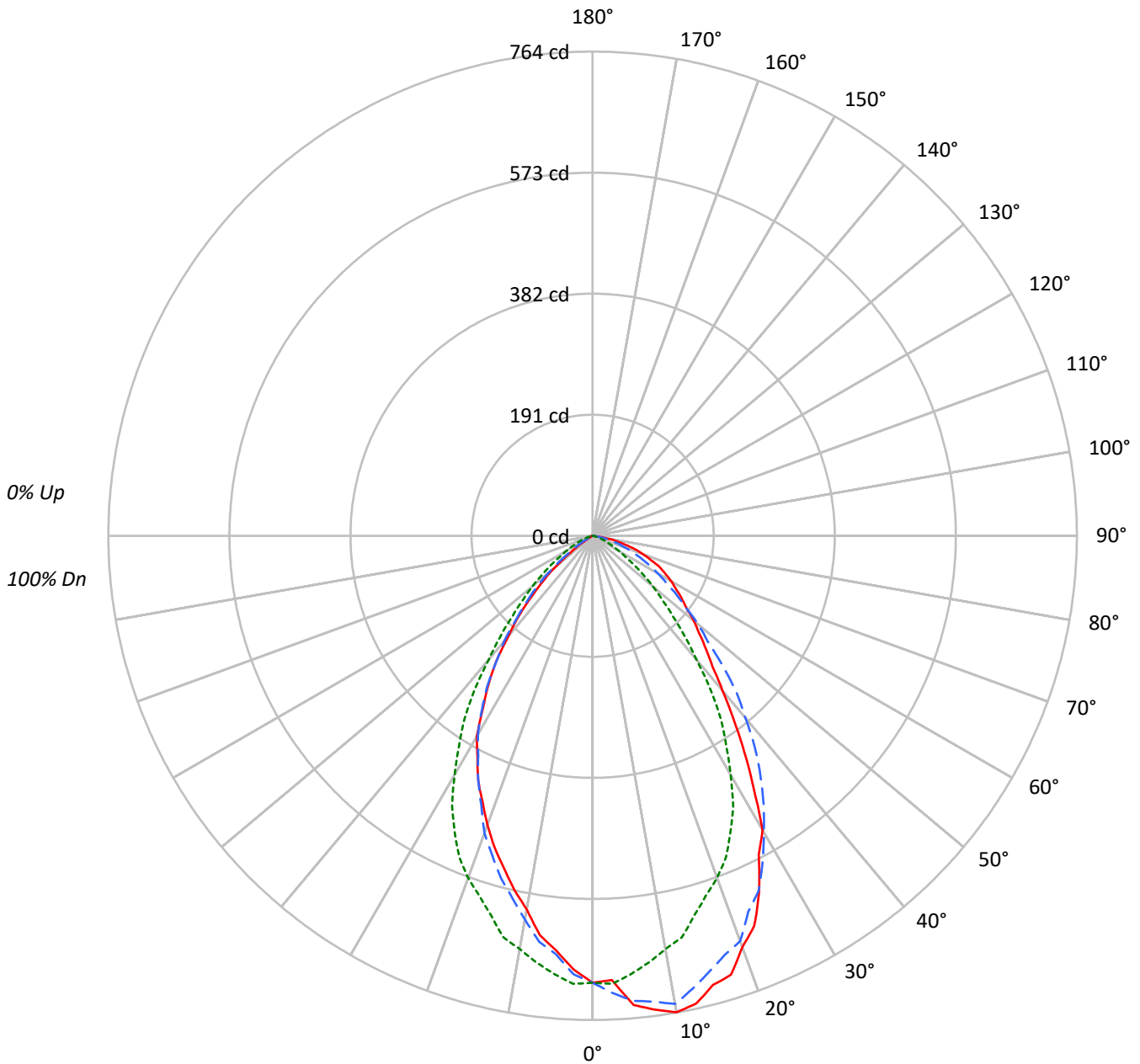
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																			
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41																			
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	68317	68317	68317
5°	72273	67508	63890
10°	75105	65121	58884
15°	73605	62161	54359
20°	71216	59186	50031
25°	66432	55038	45642
30°	59969	48705	40863
35°	49398	41700	33894
40°	40316	32185	26089
45°	34634	24441	18769
50°	31348	18598	11846
55°	28848	13427	4290
60°	27687	9164	659
65°	26751	6212	183
70°	23963	4305	227
75°	19613	2208	0
80°	12273	948	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.1	6.5
10°-20°	178.0	17.6
20°-30°	237.7	23.5
30°-40°	225.6	22.3
40°-50°	156.0	15.4
50°-60°	86.2	8.5
60°-70°	42.8	4.2
70°-80°	16.9	1.7
80°-90°	1.6	0.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	481.8	47.7
0°-40°	707.4	70.0
0°-60°	949.5	93.9
0°-90°	1010.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1010.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	705	705	705	705	705	
5°	743	736	694	663	657	71
15°	734	712	620	559	542	208
25°	622	619	515	427	427	283
35°	418	462	353	290	287	262
45°	253	290	178	146	137	197
55°	171	161	80	41	25	154
65°	117	85	27	1	1	113
75°	52	32	6	0	0	56
85°	0	1	0	0	0	5
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2
2.5°	701.8	721.2	722.9	721.2	723.8	722.9	727.1	722.9	728.0	720.4	722.1
5°	743.2	735.6	751.7	743.2	743.2	742.4	739.8	739.0	742.4	731.4	736.4
7.5°	754.2	765.2	779.6	761.8	762.7	762.7	757.6	755.9	755.9	735.6	741.5
10°	763.5	756.7	764.3	757.6	763.5	762.7	766.0	755.0	762.7	750.8	750.0
12.5°	755.9	753.4	763.5	752.5	749.1	750.0	745.7	743.2	745.7	732.2	731.4
15°	733.9	736.4	751.7	739.8	738.1	736.4	731.4	722.9	729.7	711.1	711.9
17.5°	726.3	722.1	724.6	714.5	717.0	715.3	714.5	706.9	705.2	693.3	693.3
20°	690.8	700.1	700.1	693.3	693.3	692.5	681.5	688.3	680.6	677.3	680.6
22.5°	666.3	667.1	667.1	661.2	662.0	658.7	652.7	648.5	652.7	648.5	641.7
25°	621.5	623.1	633.3	622.3	620.6	624.0	618.9	616.4	615.5	605.4	618.9
27.5°	567.3	584.3	583.4	579.2	584.3	577.5	575.0	575.8	578.3	577.5	580.9
30°	536.1	538.6	541.1	537.7	538.6	536.1	536.1	536.9	543.7	541.1	540.3
32.5°	472.6	481.1	487.9	487.9	488.7	491.2	490.4	508.2	512.4	503.9	502.2
35°	417.7	423.6	429.5	430.4	441.4	442.2	443.1	448.1	460.0	462.5	461.7
37.5°	365.3	371.2	372.9	380.5	386.4	392.3	399.1	405.8	416.0	424.4	420.2
40°	318.8	321.3	325.5	328.9	340.7	340.7	344.1	357.7	368.6	375.4	374.6
42.5°	279.9	280.7	284.1	290.0	301.0	298.5	301.0	310.3	326.4	327.2	336.5
45°	252.8	252.0	254.5	255.3	262.1	265.5	267.2	273.9	287.5	289.2	290.0
47.5°	228.3	227.4	231.7	233.4	235.9	239.3	239.3	240.1	245.2	249.4	246.0
50°	208.0	208.0	208.0	209.7	213.9	213.1	213.9	217.3	219.8	218.1	217.3
52.5°	186.0	189.4	191.9	192.8	193.6	193.6	194.5	192.8	191.9	189.4	184.3
55°	170.8	174.2	174.2	174.2	174.2	177.6	173.3	174.2	174.2	167.4	160.6
57.5°	155.6	159.0	161.5	158.1	161.5	158.1	156.4	155.6	153.9	147.1	137.0
60°	142.9	144.6	143.7	142.9	144.6	142.0	140.4	137.0	135.3	126.0	119.2
62.5°	128.5	129.4	130.2	128.5	126.8	126.0	122.6	117.5	114.1	106.5	100.6
65°	116.7	114.1	113.3	112.5	110.8	108.2	105.7	99.8	97.2	90.5	84.6
67.5°	98.9	98.1	99.8	97.2	93.0	93.0	90.5	85.4	79.5	75.3	69.3
70°	84.6	83.7	82.0	79.5	78.6	75.3	75.3	69.3	67.6	60.0	55.0
72.5°	69.3	69.3	66.8	64.3	61.7	60.0	59.2	55.0	52.4	48.2	44.0
75°	52.4	52.4	51.6	49.0	47.3	45.7	44.8	41.4	38.9	34.7	32.1
77.5°	37.2	37.2	33.8	32.1	33.0	31.3	29.6	28.7	27.9	25.4	22.0
80°	22.0	21.1	18.6	19.4	18.6	18.6	17.8	16.9	15.2	13.5	11.8
82.5°	5.9	6.8	6.8	6.8	7.6	5.9	5.9	5.9	6.8	6.8	4.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
87.5°	0.8	1.7	3.4	3.4	3.4	3.4	3.4	2.5	2.5	2.5	1.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2
2.5°	713.6	712.8	713.6	707.7	721.2	711.1	709.4	707.7	713.6	707.7	699.2
5°	728.8	720.4	717.8	715.3	722.9	711.1	708.5	709.4	705.2	694.2	695.0
7.5°	733.9	726.3	718.7	702.6	709.4	706.9	700.1	695.0	688.3	679.0	677.3
10°	735.6	727.1	716.2	711.1	700.9	697.6	695.0	686.6	678.1	662.0	657.8
12.5°	730.5	720.4	706.9	702.6	695.0	684.0	678.1	669.6	662.0	649.4	640.1
15°	708.5	700.1	695.9	681.5	678.1	671.3	659.5	647.7	636.7	619.8	614.7
17.5°	683.2	679.8	675.6	664.6	663.7	657.0	646.0	635.8	621.5	595.2	586.8
20°	657.0	657.0	643.4	639.2	647.7	634.1	625.7	616.4	586.8	574.1	558.9
22.5°	637.5	628.2	620.6	613.8	614.7	606.2	594.4	575.8	564.8	549.6	531.8
25°	599.5	602.9	585.9	583.4	585.9	566.5	560.6	545.4	529.3	514.9	501.4
27.5°	575.8	566.5	555.5	546.2	546.2	538.6	521.7	518.3	493.8	480.3	463.3
30°	540.3	533.5	524.2	510.7	509.0	503.1	489.6	481.1	455.7	435.4	426.1
32.5°	495.5	492.9	485.3	470.1	465.0	458.3	441.4	427.0	415.1	392.3	381.3
35°	463.3	454.0	438.0	425.3	421.1	409.2	395.7	385.6	372.9	352.6	338.2
37.5°	415.1	405.8	390.6	375.4	375.4	363.6	345.0	334.8	317.1	305.2	293.4
40°	372.9	361.0	345.8	328.1	325.5	308.6	301.0	284.1	273.1	254.5	252.8
42.5°	325.5	314.5	301.0	287.5	277.3	268.9	249.4	236.7	224.9	215.6	213.1
45°	282.4	268.0	256.2	239.3	229.1	219.0	206.3	197.9	188.6	178.4	172.5
47.5°	245.2	233.4	216.5	201.2	191.1	186.0	171.6	162.3	154.7	148.0	143.7
50°	207.2	192.8	183.5	166.6	164.9	153.0	141.2	133.6	129.4	123.4	117.5
52.5°	178.4	164.9	152.2	139.5	132.7	128.5	117.5	109.9	104.0	99.8	96.4
55°	150.5	138.7	128.5	115.8	111.6	105.7	93.0	91.3	85.4	79.5	75.3
57.5°	129.4	118.4	106.5	98.1	90.5	86.2	76.1	69.3	66.0	60.9	56.6
60°	109.9	98.1	88.8	78.6	75.3	69.3	61.7	55.8	51.6	47.3	43.1
62.5°	92.2	82.0	71.9	63.4	58.3	55.0	49.0	44.0	39.7	36.4	33.0
65°	76.1	66.8	58.3	49.9	47.3	43.1	38.9	34.7	31.3	27.1	23.7
67.5°	62.6	54.1	45.7	39.7	37.2	35.5	30.4	26.2	23.7	21.1	17.8
70°	49.0	43.1	36.4	31.3	28.7	26.2	22.8	20.3	16.9	15.2	12.7
72.5°	38.0	33.0	27.1	22.8	21.1	19.4	16.1	13.5	11.8	10.1	8.5
75°	27.1	22.8	19.4	15.2	14.4	13.5	11.0	9.3	7.6	5.9	5.1
77.5°	18.6	15.2	11.8	10.1	9.3	7.6	6.8	5.1	4.2	3.4	2.5
80°	10.1	7.6	5.9	5.1	4.2	3.4	3.4	2.5	1.7	1.7	0.8
82.5°	3.4	2.5	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2
2.5°	704.3	695.0	697.6	697.6	695.9	695.9	694.2	691.6	692.5	687.4	676.4
5°	696.7	684.9	683.2	684.9	678.1	676.4	673.0	678.1	662.9	668.8	662.0
7.5°	674.7	663.7	661.2	667.1	658.7	653.6	652.7	659.5	646.0	639.2	631.6
10°	650.2	646.0	638.4	634.1	631.6	632.4	625.7	617.2	614.7	613.0	606.2
12.5°	628.2	618.9	612.2	607.1	605.4	605.4	594.4	592.7	585.1	583.4	573.3
15°	602.0	591.0	586.8	580.0	574.1	577.5	564.8	561.4	558.9	547.9	549.6
17.5°	579.2	567.3	557.2	553.0	547.9	542.8	531.0	533.5	527.6	527.6	512.4
20°	549.6	536.9	529.3	520.8	520.8	514.1	505.6	506.5	498.9	491.2	477.7
22.5°	518.3	504.8	495.5	492.1	483.6	481.9	471.8	469.3	459.1	460.0	448.1
25°	485.3	471.8	459.1	460.0	452.4	449.0	443.1	431.2	427.0	421.9	418.5
27.5°	446.4	437.1	426.1	425.3	410.9	411.8	404.2	400.8	390.6	393.2	385.6
30°	410.9	397.4	387.2	384.7	378.8	377.1	365.3	360.2	361.9	355.1	350.9
32.5°	374.6	354.3	350.0	345.0	341.6	337.4	328.9	332.3	324.7	326.4	319.6
35°	326.4	317.9	306.9	306.9	303.5	300.2	294.2	297.6	290.0	286.6	279.9
37.5°	285.8	278.2	267.2	270.6	264.6	259.6	254.5	255.3	248.6	247.7	241.0
40°	241.8	237.6	230.0	230.0	225.8	225.8	223.2	220.7	216.5	211.4	203.8
42.5°	200.4	197.0	193.6	194.5	188.6	193.6	186.9	191.1	177.6	176.7	171.6
45°	169.9	162.3	163.2	159.8	156.4	158.1	152.2	153.9	146.3	144.6	139.5
47.5°	137.8	135.3	130.2	128.5	128.5	126.0	123.4	122.6	119.2	115.0	108.2
50°	113.3	104.0	102.3	99.8	98.1	98.1	94.7	89.6	90.5	86.2	79.5
52.5°	88.8	81.2	77.8	76.9	73.6	71.9	67.6	64.3	61.7	60.0	55.8
55°	68.5	61.7	57.5	57.5	52.4	52.4	46.5	44.0	40.6	37.2	34.7
57.5°	51.6	48.2	44.0	40.6	38.9	34.7	31.3	27.1	24.5	19.4	16.1
60°	38.9	35.5	31.3	28.7	27.1	22.8	18.6	15.2	9.3	7.6	6.8
62.5°	28.7	25.4	21.1	19.4	17.8	14.4	10.1	5.1	2.5	2.5	2.5
65°	21.1	16.9	13.5	11.8	10.1	7.6	3.4	1.7	0.8	0.8	0.8
67.5°	14.4	11.0	7.6	6.8	5.1	2.5	0.8	0.8	0.8	0.8	0.8
70°	9.3	6.8	3.4	2.5	1.7	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	5.9	3.4	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	3.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	705.2	705.2	705.2	705.2	705.2	705.2	705.2	705.2
2.5°	688.3	682.3	685.7	678.1	681.5	687.4	683.2	684.9
5°	664.6	661.2	657.0	646.0	654.4	661.2	657.8	657.0
7.5°	639.2	627.4	633.3	629.9	628.2	635.0	627.4	635.8
10°	613.0	604.5	603.7	597.8	597.8	602.9	603.7	598.6
12.5°	574.1	569.9	569.9	569.0	568.2	573.3	574.1	571.6
15°	546.2	544.5	540.3	539.4	534.4	542.0	542.8	542.0
17.5°	512.4	513.2	509.0	509.0	512.4	514.9	508.2	514.9
20°	489.6	485.3	483.6	476.0	480.3	484.5	484.5	485.3
22.5°	456.6	449.8	452.4	448.1	445.6	451.5	451.5	454.0
25°	419.4	419.4	421.1	418.5	420.2	423.6	421.1	427.0
27.5°	383.9	387.2	387.2	383.9	385.6	395.7	399.9	393.2
30°	350.9	351.7	354.3	352.6	357.7	361.0	360.2	365.3
32.5°	313.7	317.9	319.6	317.1	318.8	326.4	322.1	321.3
35°	284.9	277.3	276.5	277.3	280.7	282.4	280.7	286.6
37.5°	243.5	241.0	237.6	238.4	241.0	244.4	246.0	250.3
40°	203.8	200.4	200.4	199.5	197.0	206.3	206.3	206.3
42.5°	169.1	168.3	164.0	164.0	167.4	169.9	168.3	174.2
45°	138.7	135.3	132.7	132.7	135.3	135.3	137.8	137.0
47.5°	109.1	105.7	106.5	104.0	106.5	109.9	105.7	106.5
50°	82.0	82.0	80.3	82.0	81.2	82.0	80.3	78.6
52.5°	55.8	63.4	64.3	60.9	53.3	46.5	42.3	45.7
55°	32.1	28.7	28.7	27.9	26.2	25.4	22.8	25.4
57.5°	16.1	14.4	14.4	14.4	13.5	12.7	11.0	11.0
60°	6.8	5.9	5.9	5.1	4.2	3.4	2.5	3.4
62.5°	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7
65°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
67.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
70°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)